



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,980	10/09/2003	In-Seok Shim	678-1095 (P10739)	8837

28249 7590 01/29/2007  
DILWORTH & BARRESE, LLP  
333 EARLE OVERTON BLVD.  
SUITE 702  
UNIONDALE, NY 11553

EXAMINER
----------

ALAM, FAYYAZ

ART UNIT	PAPER NUMBER
----------	--------------

2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/681,980

Applicant(s)

SHIM ET AL.

Examiner

Fayyaz Alam

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

This office action is Non-Final.

Applicant's arguments filed on 12/7/2006 have been fully considered but they are not persuasive in regards to claim 1.

In regards to **claim 1**, Applicant argues that the C/I ratios are not equivalent to the BER\_FWD measurement and calculation and that the prior art as disclosed by Todd et al. fails to disclose determining a number of signal strength bars according by analyzing the intensity between the interference signal and the RSSI value of the above signal received by the wireless terminal.

The examiner respectfully argues that Todd et al. clearly discloses using RSSI\_FWD (read as RSSI values) and BER\_FWD (read as C/I ratios) measurements and calculations to determine the number of signal strength bars (see col. 3, lines 31 - 38). The BER\_FWD or bit error rate is an indication of the number of bits that are in error due to interference that occurs from the environment and other signals, therefore, it is fair to equate the BER\_FWD or bit error rate with the C/I ratio, since they both account for interference. In addition, the number of signal strength bars (clearly shown in figs. 4 - 6) are determined by analyzing and calculating RSSI\_FWD and BER\_FWD (see figs. 4 - 6; col. 4, lines 47 - 67).

In light of the above arguments, the rejection to claim 1 still stands.

Applicant's arguments see pg. 2, filed 12/7/2006, with respect to the rejection(s) of claim(s) 2 - 11 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yang (PCT Publication # WO 02/031992).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1** is rejected under 35 U.S.C. 102(b) as being anticipated by **Todd et al. (U.S. Patent # 6,035,183)**.

Consider **claim 1**, Todd et al. disclose a method for displaying signal strength bars (see figure 6) in a fixed wireless access terminal (10) (read as wireless terminal device; figure 2) comprising:

Performing an averaging function (read as analyzing) on the RSSI values over one second intervals (read as collecting RSSI values for a predetermined time T; see column 3, lines 31 - 33) and performing averaging function (read as analyzing) on the bit error counts (read as C/I ratios, since both are attributed to the interference in a communication link; see column 3, lines 36 - 38) over one second interval.

Art Unit: 2618

Determining and displaying the bar graph (read as signal strength bars; column 4, lines 47 - 59; figure 6) on the wireless access terminal (10) (read as wireless terminal device) based on RSSI\_FWD and BER\_FWD values (read as RSSI and C/I ratios; column 4, lines 61 - 63).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Todd et al (U.S. Patent # 6,035,183)** in view of **Yang (PCT Publication # 2004/0038650)** and further in view **Reial (U.S. Application # 2004/0053592)**

Consider **claim 2** as applied to claim 1, Todd et al. disclose performing an averaging function on the RSSI values over one second intervals (read as consecutively collecting a predetermined number of RSSI values for a predetermined unit time t and storing the collected RSSI values, since in order to average, one would need multiple values collected over a period of time and store them either temporarily or permanently to perform the averaging function; see column 3, lines 31 - 35). In addition, Todd et al. disclose averaging function being performed on the bit error counts over one second intervals (read as C/I ratio and also read as consecutively calculating a predetermined number of C/I ratios for the predetermined unit of time t and storing the calculated C/I ratios, since in order to average, one would need multiple values collected over a period of time and store them either temporarily or permanently to perform the averaging function; see column 3, lines 36 - 40). Todd et al. also discloses updating the subscriber terminal and displaying the results (read as repeating steps a - d a predetermined number N times; see column 5, lines 1 - 3 and figure 7).

Todd et al. fail to disclose summing N number of RSSI\_AVR values obtained by the execution of step e and determining the sum of the RSSI AVR values as an analysis result of the RSSI values for the predetermined time T.

In the related field of endeavor, Yang discloses a calculation that adds the signal strength (read as RSSI) averages (read as summing N number of RSSI\_AVR values obtained by the execution of step e and determining the sum of the RSSI\_AVR values as an analysis result of the RSSI values for the predetermined time T; see abstract).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the teachings of Yang with that of Todd et al. in order to account for signal strength variation and produce more accurate calculations.

Todd et al. further modified by Yang fail to disclose summing N number of C/I\_AVR values calculated by the execution of step e, and determining the sum of the C/I\_AVR values as an analysis result of the C/I ratios for the predetermined time T.

In the related field of endeavor, Reial disclose an algorithm that computes an interference ratio (read C/I\_AVR) using the sum of the average interference power estimates (read as C/I ratios; see [0027]) (read as summing N number of C/I\_AVR values calculated by the execution of step e, and determining the sum of the C/I\_AVR values as an analysis result of the C/I ratios for the predetermined time T).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Todd et al. and Yang with the teachings of Reial in order to account for variation in interference measurements and produce more accurate calculations.

**Claims 3 - 7, 9, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Todd et al (U.S. Patent # 6,035,183)** in view of **Yang (PCT Publication # 2004/0038650)**.

Consider **claims 3 and 5** as applied to claim 2, Todd et al. as modified by Yang fail to disclose that the predetermined unit time  $t$  is 240ms.

In view of Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (See MPEP 2131.04) changing specific values are held to be obvious.

Although, Todd et al. not specifically disclose that the predetermined time unit  $t$  is 240ms, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to conveniently change the time from 1s (one second) to 240ms (see column 3, lines 31 - 40).

Consider **claims 4 and 6** as applied to claims 3 and 5 respectively, Todd et al. as modified by Yang fail to disclose that 8 RSSI values and C/I ratios are collected and stored during a period of 30ms of the predetermined time  $T$ .

In view of Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (See MPEP 2131.04) changing specific values are held to be obvious.

Although, Todd et al. not specifically disclose that 8 RSSI values and C/I ratios are collected and stored during a period of 30ms, it would have been obvious to person of ordinary skill in the art at the time the invention was made to conveniently change the number of collected values to 3 and the time to 1 second (see column 3, lines 31 -40 and column 4, lines 47 - 48).

Consider **claim 7** as applied to claim 2, Todd et al. as modified by Yang and further modified by Reial fail to disclose  $N$  equals 5.

In view of Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (See MPEP 2131.04) changing specific values are held to be obvious.



Although, Todd et al. as modified by Yang not specifically disclose N equals 5, it would have been obvious to person of ordinary skill in the art at the time the invention was made to conveniently change the value of N since Yang uses at least two signal strength averages (see abstract).

Consider **claims 9 and 11** as applied to claim 2, Todd et al. as modified by Yang fail to disclose summing the RSSI\_AVR and C/I\_AVR values using n number of RSSI values and C/I ratios collected in step a and b respectively, wherein n is greater than N.

In the related field of endeavor, Yang discloses adding or summing signal strength mean values wherein it is inherent by using the term "mean" would indicate multiple values "n" are used to compute the average. Yang also discloses adding the signal strength average at least two times (read as N) where n can be greater than N (see abstract).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Todd et al. with the teachings of Yang in order to account for variations in measurements and produce more accurate calculations.

**Claims 8 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Todd et al. (U.S. Patent # 6,035,183)** in view of **Yang (U.S. Application # 2004/0038650)** and further in view of **Charash (U.S. Application # 2005/0033126)**.

Consider **claims 8 and 10** as applied to claim 2, Todd et al. as modified above fail to disclose a manner that excludes maximum and minimum values of the RSSI values and C/I ratios collected in step a.

In the related field of endeavor, Charash discloses a smart averaging scheme, which removes maximum and minimum numbers from a set and then takes the average (see [0063 - 0066]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Todd et al. with the teachings of Charash in order to use a well-known statistical technique to achieve more stable and robust results.

### ***Conclusion***

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Fayyaz Alam whose telephone number is (571) 270-1101. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*Fayyaz Alam*

Jan. 7, 2007

EDAN ORGAD  
PRIMARY PATENT EXAMINER

*Edan Orgad* 1/26/07